TRAFFIC STATEMENT FOR ROUTE 28 ZMAP APPLICATIONS TO THE CURRENT ZONING ORDINANCE (AKA ZONING CONVERSIONS)

INTRODUCTION

The purpose of this report is to provide traffic information which will aid the Board of Supervisors in understanding the traffic situation in the Route 28 corridor as part of their review of proposed zoning conversions. This report provides information for major roads and intersections in the Route 28 corridor including road descriptions, levels of service at major intersections and daily traffic volumes on the major road links in the Route 28 corridor. This includes an existing condition and traffic counts and intersection levels of service projected to the year 2010.

In order to understand the traffic impacts of different land uses, a comparison of the trips generated between several key uses allowed under the 1972 and 1993 Loudoun County Zoning Ordinances is also provided. It is envisioned that this report would, in most cases, negate the need for individual traffic studies to be submitted for individual proposed zoning conversions, thus providing a more streamlined process.

BACKGROUND INFORMATION

The PDIP district is established for light and medium industrial uses, office uses, and necessary supporting accessory uses and facilities, designed with a park-like atmosphere to complement surrounding land uses by means of appropriate sitting of buildings and service areas, attractive architecture, and effective landscape buffering.

PDIP districts are generally located in areas served by one or more major arterial or collector roads, by public water and sewer, and consistent with locations identified in the Comprehensive Plan for industrial use. When mapped, the district is no less than twenty (20) acres in size. Incremental and contiguous additions of a minimum of one (1) acre to an existing PDIP zoning district is allowed. Incremental additions demonstrate their relationship and compatibility with the previously approved district to which it is being added.

The PDOP district (Planned Development Office Park) is established primarily for administrative, business and professional offices and necessary supporting accessory uses and facilities, designed with a park like atmosphere and environmentally sensitive design to accommodate and complement existing natural features including extensive landscaping, low ground coverage by buildings, buildings of moderate height, and careful attention to such aesthetic considerations as location and size of signs, lighting, parking and service areas and the like.

The PDOP district shall be no less than five (5) acres and shall be located:

1) On arterial or collector roads.

2) In areas served by public water and sewer facilities.

3) In areas compatible with other commercial development.

4) As envisioned in the Comprehensive Plan.

Incremental and contiguous additions of a minimum of one (1) acre to an existing PDOP zoning district shall be allowed. Incremental additions must demonstrate their relationship and compatibility with the previously approved district to which it is being added.

ROADWAY NETWORK

A description of the existing roadway network within the vicinity of the PDIP district is presented below:

- Route 7 (Harry Byrd Highway – from Cascade Parkway west to Algonkian Parkway) is a six-lane, controlled access, median divided, principal arterial with grade separated interchange at Cascade Parkway. Individual site access occurs along this section. The current posted speed limit on this road is 55 mph within the vicinity of the project site.

- Route 7 (Harry Byrd Highway – from Algonkian Parkway west to Ashburn Village Boulevard) is a six-lane, controlled access, median divided, principal arterial with grade separated interchanges at Algonkian Parkway/Atlantic Boulevard and Route 28. Left and right turn lanes are provided at all intersections. The current posted speed limit on this road is 55 mph within the vicinity of the project site.

- Route 28 (Sully Road – from Route 625 north to Route 7) is a six-lane, controlled access, median divided, principal arterial with grade-separated interchanges at Route 625 and Route 7. Left and right turn lanes are provided at all intersections. The current posted speed limit on this road is 55 mph within the vicinity of the project site.

- Route 625 (Church Road – from Route 637 west to Ruritan Circle (west)/Davis Drive) is a two to four-lane, local access, undivided, major collector with current posted speed limit of 35 mph within the vicinity of the project site.

- Route 625 (Church Road – from Ruritan Circle (west)/Atlantic Boulevard west to Route 28) is a four-lane, limited access, median divided, major collector with grade-separated interchange at Route 28. The road alignment was shifted north of the existing alignment to provide desirable interchange design. Left and right turn lanes are provided at its intersection with Atlantic Boulevard. The current posted speed limit on this road is 35 mph within the vicinity of the project site.

- Route 625 (Waxpool Road – from Route 28 west to Pacific Boulevard) is a six-lane, limited access, median divided, major collector with grade-separated interchange at Route 28. The road alignment was shifted north of the existing alignment to provide desirable interchange design. Left and right turn lanes are provided at its intersection with Pacific Boulevard. The current posted speed limit on this road is 45 mph within the vicinity of the project site.

- Route 625/Route 640 (Waxpool Road/Farmwell Road – from Pacific Boulevard west to Route 641) is a four to sixlane, controlled access, median divided, major collector with left and right turn lanes at all intersections. The current posted speed limit on this road is 45 mph within the vicinity of the project site.

- Route 28 East Collector Road (Atlantic Boulevard – from Route 625 north to Route 7) is a four-lane, controlled access, median divided, major collector with grade-separated interchange at Route 7 with Algonkian Parkway. Left and right turn lanes are required at all intersections. The current posted speed limit on this road is 45 mph within the vicinity of the project site.

- Route 28 East Collector Road (Davis Drive – south of Route 625) is a four-lane, local access, undivided, major collector with left and right turn lanes at major intersections. The current posted speed limit on this road is 35 mph within the vicinity of the project site.

- Route 28 West Collector Road (Pacific Boulevard – from Route 625 north to just south of W&OD trail crossing) is a four-lane, controlled access, median divided, major collector with left and right turn lanes at all intersections. The current posted speed limit on this road is 35 mph within the vicinity of the project site.

- Route 28 West Collector Road (Pacific Boulevard – from West Severn Way north approximately 700 feet) is a four-lane, local access, undivided, minor collector with left and right turn lanes at major intersections.

- Route 607 (Loudoun County Parkway – from Smith Switch Road south to Redskins Drive) is a two-lane, local access, secondary road with 7foot travel lanes. The current posted speed limit on this road is 25 mph within the vicinity of the project site. It should be noted that Route 607 was closed to vehicular traffic from Route 7 south to Smith Switch Road due to construction work along this section.

- Route 607 (Loudoun County Parkway – from Redskins Drive south to Route 625) is a four-lane, controlled access, median divided, minor arterial with left and right turn lanes at major intersections. The current posted speed limit on this road is 45 mph within the vicinity of the project site.

- Route 607 (Loudoun County Parkway – south of Route 625) is a six-lane, controlled access, median divided, minor arterial with left and right turn lanes at all intersections. The current posted speed limit on this road is 45 mph within the vicinity of the project site.

- Route 637 (Potomac View Road – from Route 625 north to Cascade Parkway at Nokes Boulevard) is a four-lane, controlled access, median divided, major collector with single left and right turn lanes at all intersections. The current posted speed limit on this road is 45 mph within the vicinity of the project site.

- Route 638 Relocated (Nokes Boulevard – from Route 28 east to Route 637/Cascade Parkway at Potomac View Road) is a four-lane, controlled access, median divided, major collector with left and right turn lanes at major intersections. The current posted speed limit on this road is 45 mph within the vicinity of the project site.

- Route 636 (Shaw Road – from Route 625 to Route 606) is a two-lane, local access, undivided, minor collector with left and right turn lanes at major intersections.

- Route 846 (Sterling Boulevard – from Route 28 to Route 7) is a four-lane, local access, median divided, major collector with left and right turn lanes at all intersections.

Figure 1 shows the existing and planned (near future) roadway network surrounding the PD-IP district.

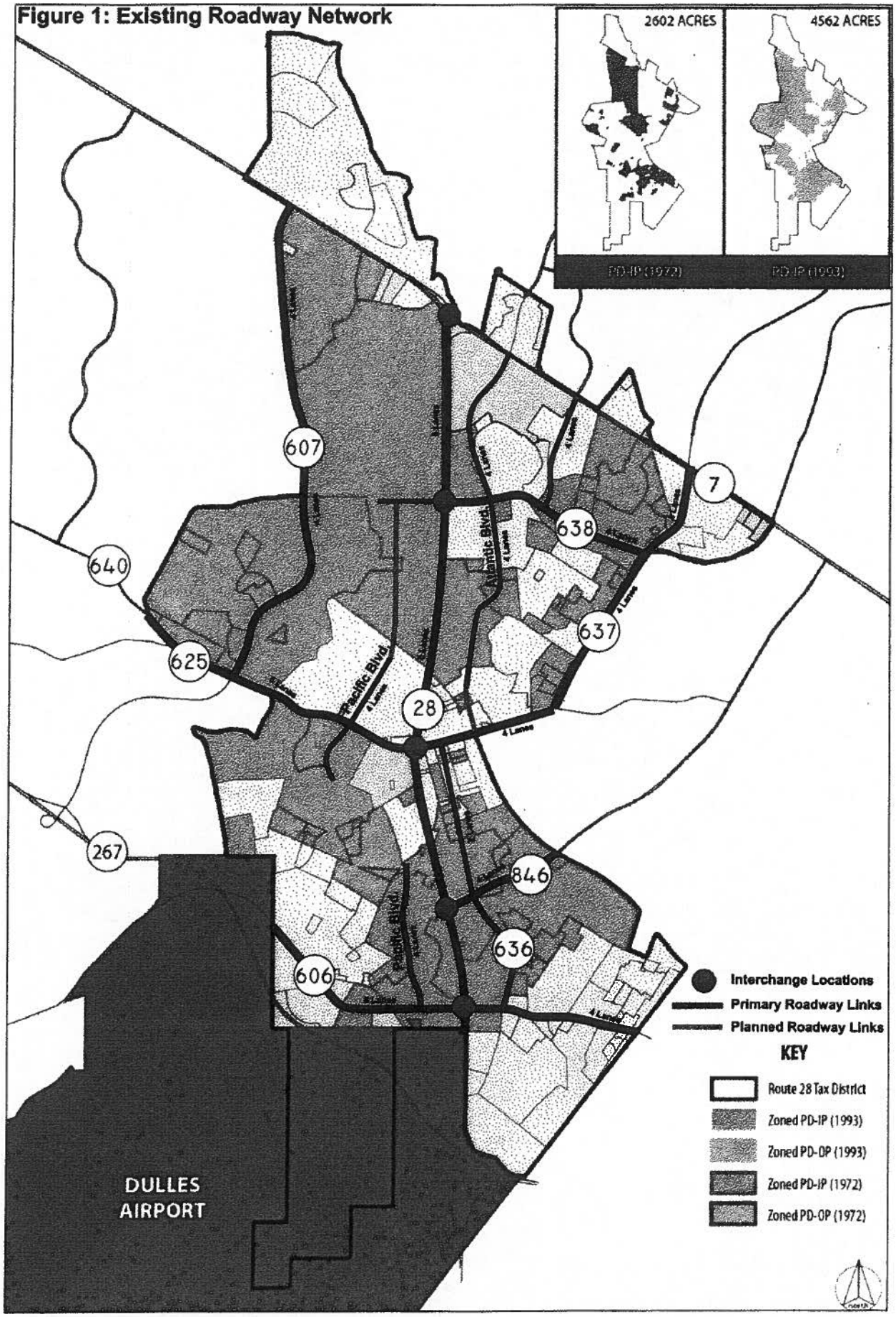
TRAFFIC VOLUMES AND LOS (EXISTING AND PROJECTED)

Traffic volume data was summarized for the existing conditions with the base year of 2006. The Virginia Department of Transportation (VDOT) provides count data on major roadway links for both hourly and daily 2way volume estimates. The road link traffic volumes shown on Figure 2 are based on the latest available (2006) VDOT traffic counts data.

A number of traffic studies have been prepared for projects in this area and have been submitted and reviewed by the County and VDOT. These studies have included projections for future years based on approved developments and historical growth in traffic. These studies have been referenced to develop future year 2010 traffic volumes for the primary roadway links within the study area. Those 2010 daily and hourly two way link volumes are shown on the attached Figure 2.

The traffic studies identified previously have also included information for both existing and future year levels of service. Levels of Service (ranging from A to F) represent an operational assessment of the intersections ability to accommodate the traffic demand. Level of Service A identifies an intersection has capacity in excess of demand. Level of Service E represents that an intersection has reached its capacity and cannot process any increase in demand. Level of Service F represents an intersection where demand is in excess of capacity. Level of Service data is provided on the attached Figure 3 for both the existing and 2010 conditions.

Figure 1: Existing Roadway Network



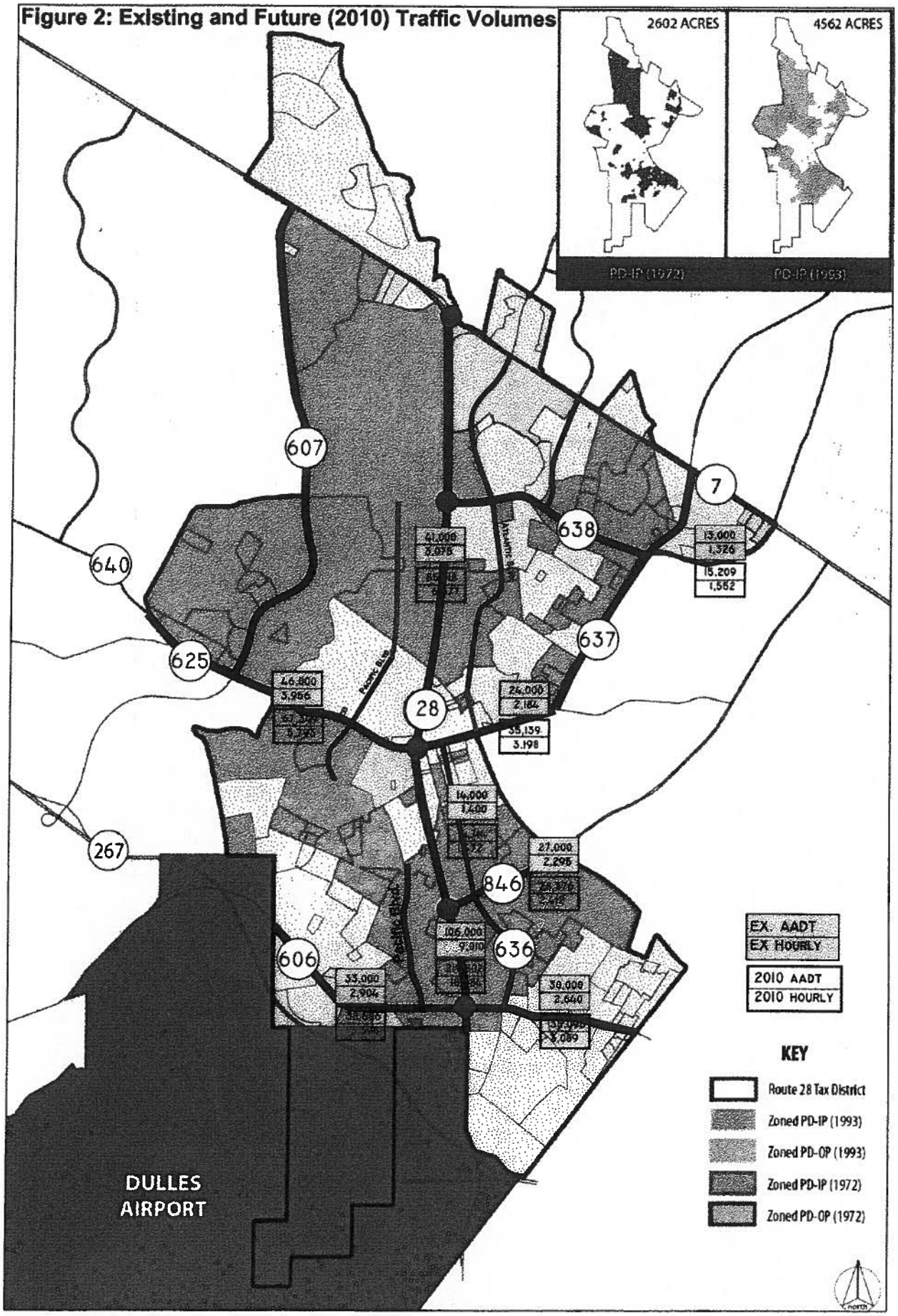


Figure 2: Existing and Future (2010) Traffic Volumes
2602 ACRES
4562 ACRES
PD-IP (1972)
PD-IP (1993)
607
640
625
28
267
606
846
636
638
637
7
DULLES AIRPORT
EX. AADT
EX HOURLY
2010 AADT
2010 HOURLY
KEY
Route 28 Tax District
Zoned PD-IP (1993)
Zoned PD-OP (1993)
Zoned PD-IP (1972)
Zoned PD-OP (1972)

A-6

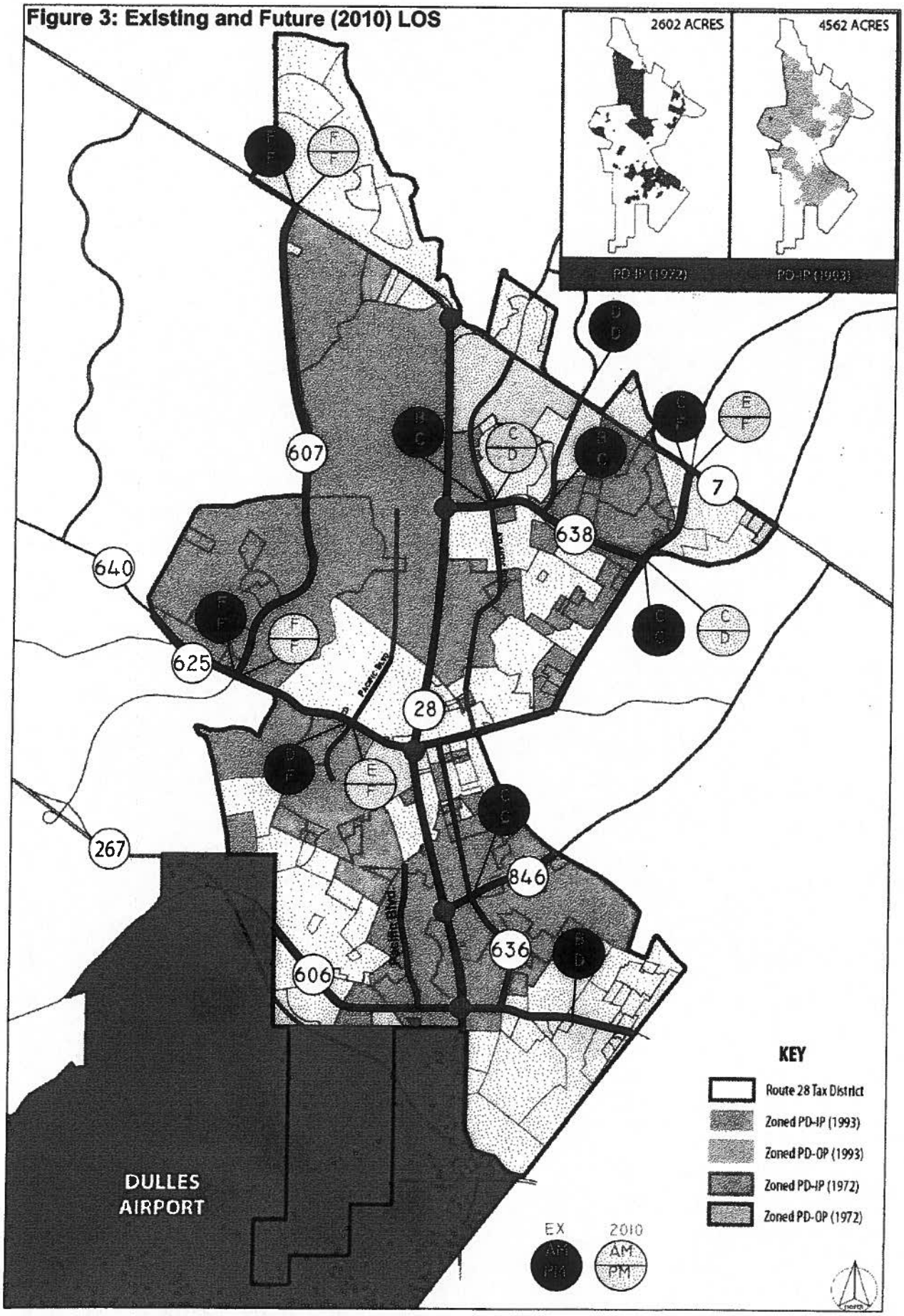


Figure 3: Existing and Future (2010) LOS
2602 ACRES
4562 ACRES
PD-IP (1972)
PD-IP (1993)
607
640
625
267
606
28
638
7
846
636
DULLES AIRPORT
KEY
Route 28 Tax District
Zoned PD-IP (1993)
Zoned PD-OP (1993)
Zoned PD-IP (1972)
Zoned PD-OP (1972)
EX
2010
AM
PM

TRIP GENERATION COMPARISON – PD-IP

A comparison of the trips generated by the highest intensity permitted uses for PD-IP district based on the 1972 Zoning Ordinance, 1993 Zoning Ordinance and 1993 Revised Zoning Ordinance was conducted. The results of the comparison are shown in the following table. For the purposes of this analysis, an average parcel size of 20 acres was assumed along with an FAR of 0.4:

Table 1: Trip Generation Comparison for Peak Hour Trips

1972 PD-IP (A)	R1993 PD-IP (B)	1993 PD-IP (C)	(B) - (A)	(C) – (B)
Research and Development	Office	Post Office	143*	291**
	Office	Walk-in Bank		293^
	Office	Health and Fitness Center		92^^

* 20 Acre Parcel – 0.4 FAR
** 31,000 SF (Avg. Size for Post Office)
^ 5,000 SF (Avg. Size for Walk-in Bank)
^^36,000 SF (Avg. Size for Health and Fitness Center)

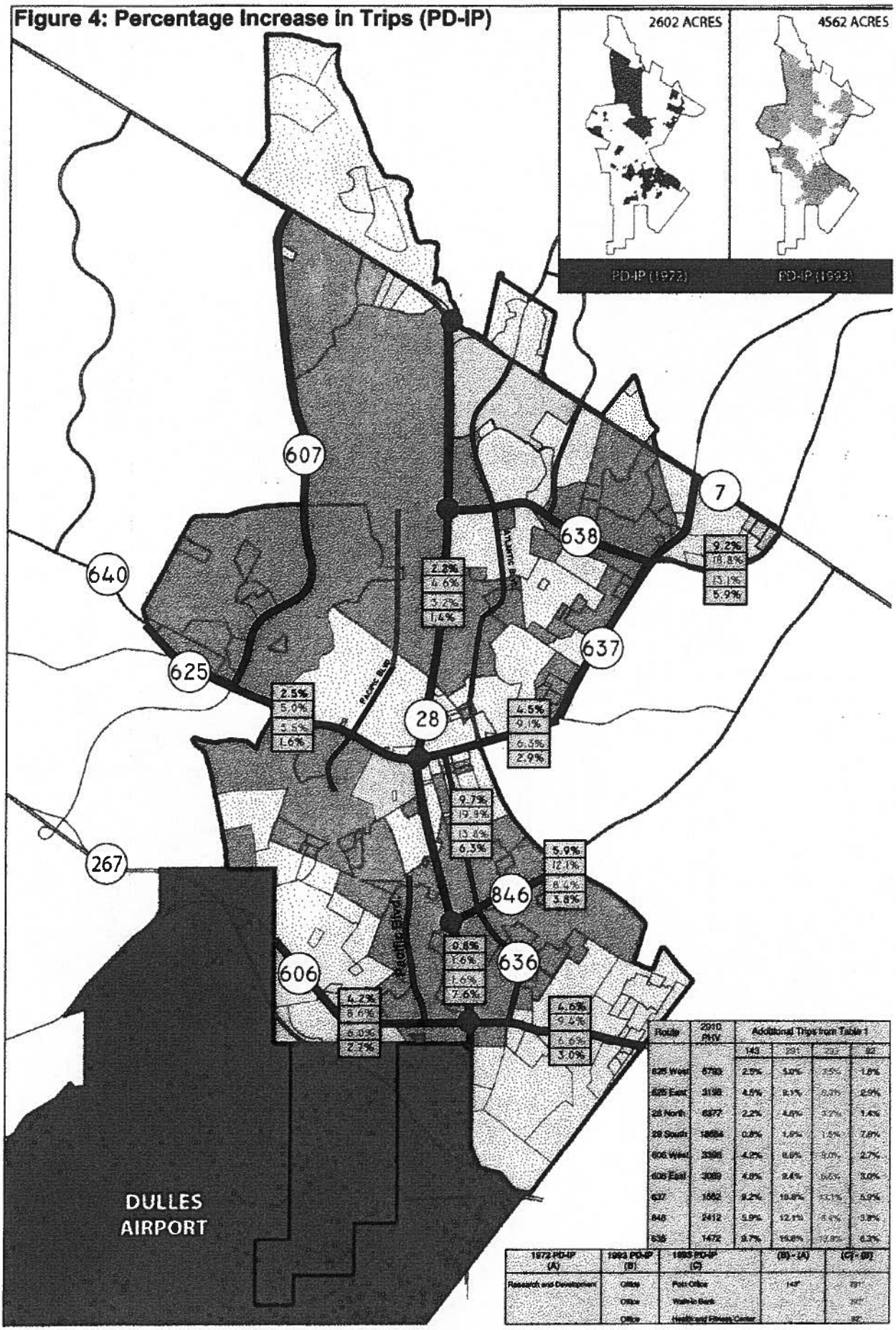
TRAFFIC IMPACTS – PD-IP

The additional trips generated as shown in Table 1 were applied to the projected traffic volumes for 2010 as shown in Figure 2. The percentage increase in trips on the selected roadway network is shown in Table 2 below and graphically in Figure 4.

Table 2: Impacts of Additional Trips

Route	2010 PHV	Additional Trips from Table 1			
		143	291	203	92
625 West	5793	2.5%	5.0%	3.5%	1.6%
625 East	3198	4.5%	9.1%	6.3%	2.9%
28 North	6377	2.2%	4.6%	3.2%	1.4%
28 South	18,684	0.8%	1.6%	1.6%	7.6%
606 West	3398	4.2%	8.6%	6.0%	2.7%
606 East	3089	4.6%	9.4%	6.6%	3.0%
637	1552	9.2%	18.8%	13.1%	5.9%
846	2412	5.9%	12.1%	8.4%	3.8%
636	1472	9.7%	19.8%	13.8%	6.3%

Figure 4: Percentage Increase in Trips (PD-IP)



Node	2010 PMV	Additional Trips from Table 1			
		143	291	205	92
625 West	6780	2.5%	5.0%	3.5%	1.6%
625 East	3138	4.5%	9.1%	6.5%	2.9%
28 North	6877	2.2%	4.6%	3.2%	1.4%
28 South	19694	0.8%	1.6%	1.5%	7.6%
606 West	3586	4.2%	8.6%	6.0%	2.7%
606 East	2089	6.6%	13.6%	9.4%	4.3%
637	1582	9.2%	10.8%	13.1%	5.9%
846	2412	5.9%	12.1%	8.4%	3.8%
638	1472	9.7%	19.8%	13.8%	6.3%

1972 PD-IP (A)	1993 PD-IP (B)	1993 PD-IP (C)	(B) - (A)	(C) - (B)
Research and Development	Office	Post Office	143	291
	Office	Walk-in Bank		205
	Office	Health and Fitness Center		92

TRIP GENERATION COMPARISON – PD-OP

A comparison of the trips generated by the permitted uses for PD-OP based on the 1973 Zoning Ordinance,1972 Zoning Ordinance and 1993 Revised Zoning Ordinance was conducted. The results of the comparison are shown in the following table:

Table 3: Trip Generation Comparison for Peak Hour Trips

1972 & 1993 PD-OP (A)	R1993 PD-OP (B)	(B) - (A)
Office	Drive-in Bank	177^
	Health & Fitness Center	92^^
	Medical & Dental Office	777*
1972 & 1993 PD-OP (A)	**R1993 PD-OP (B)**	**(B) - (A)**
Office (0.4 FAR)	Office (0.6 FAR)	271*

* 20 Acre Parcel – 0.4 FAR
^ 4,000 SF (Avg. Size for Drive-in Bank)
^^36,000 SF (Avg. Size for Health and Fitness Center)

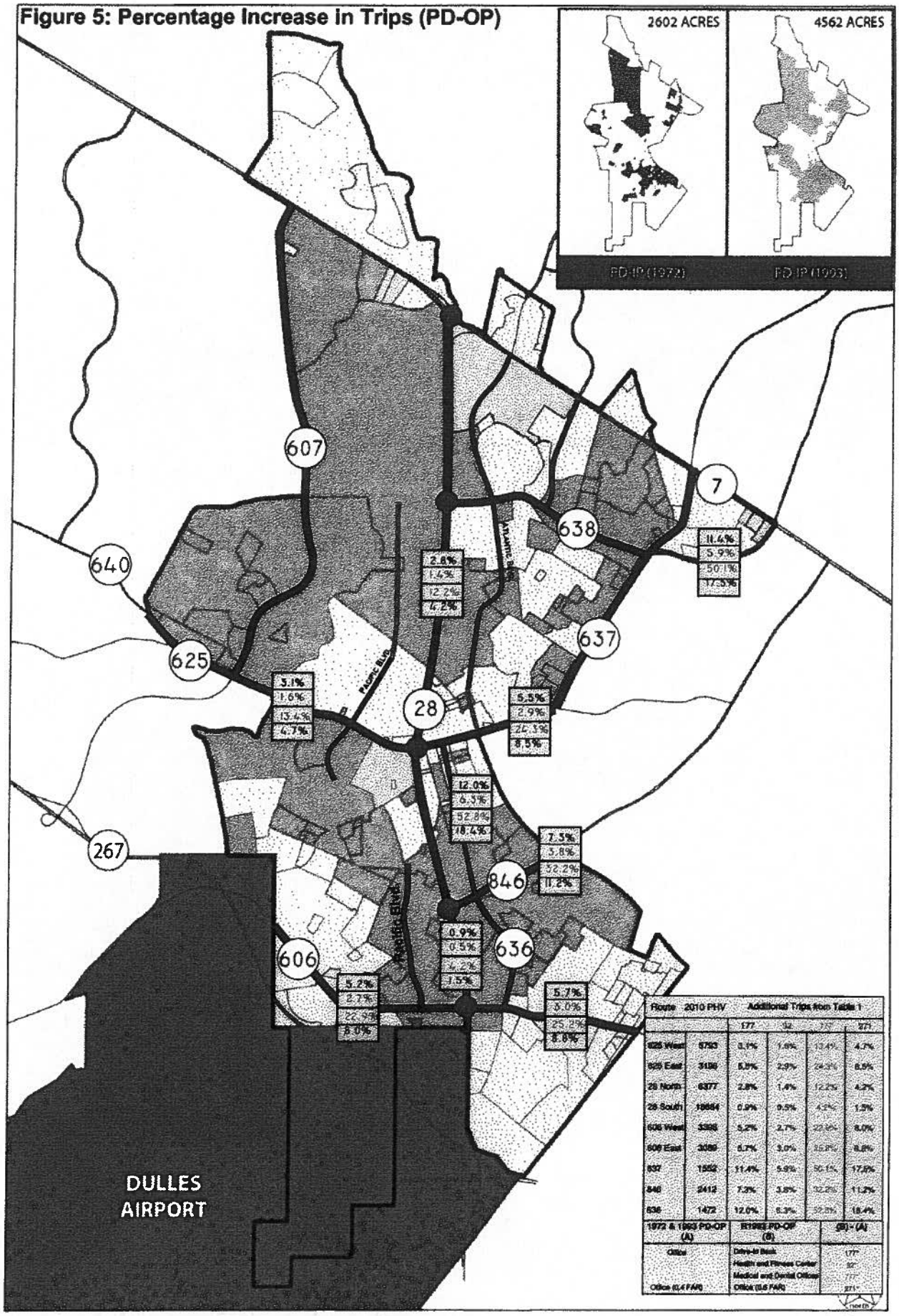
TRAFFIC IMPACTS – PD-OP

The additional trips generated as shown in Table 1 were applied to the projected traffic volumes for 2010 as shown in Figure 2. The percentage increase in trips on the selected roadway network is shown in Table 4 below and graphically in Figure 5.

Table 4: Impacts of Additional Trips

Route	2010 PHV	Additional Trips from Table 3			
		177	92	777	271
625 West	5793	3.1%	1.6%	13.4%	4.7%
625 East	3198	5.5%	2.9%	24.3%	8.5%
28 North	6377	2.8%	1.4%	12.2%	4.2%
28 South	18,684	0.9%	0.5%	4.2%	1.5%
606 West	3398	5.2%	2.7%	22.9%	8.0%
606 East	3089	5.7%	3.0%	25.2%	8.8%
637	1552	11.4%	5.9%	50.1%	17.5%
846	2412	7.3%	3.8%	32.2%	11.2%
636	1472	12.0%	6.3%	52.8%	18.4%

Figure 5: Percentage Increase in Trips (PD-OP)



Route	2010 PHV	Additional Trips from Table 1			
		177	52	77	271
625 West	6753	3.1%	1.6%	13.4%	4.7%
625 East	3139	5.5%	2.9%	24.3%	8.5%
28 North	6377	2.8%	1.4%	12.2%	4.2%
28 South	19884	0.9%	0.5%	4.2%	1.5%
606 West	3308	5.2%	2.7%	22.9%	8.0%
606 East	3286	5.7%	3.0%	25.2%	8.8%
637	1552	11.4%	5.9%	50.1%	17.5%
846	2412	7.3%	3.8%	32.2%	11.2%
636	1472	12.0%	6.3%	52.8%	18.4%

1972 & 1993 PD-OP (A)	R1993 PD-OP (B)	(B) - (A)
Office	Drive-In Bank	177*
	Health and Fitness Center	52*
	Medical and Dental Office	77*
Office (0.4 FAR)	Office (0.6 FAR)	271*

CONCLUSIONS

This report provides a summary of traffic information for major road facilities in the vicinity of the PDIP district adjacent to the Route 28 corridor. The report includes daily traffic on major road links and LOS information at major intersections. This includes an existing condition and traffic data projected to the year 2010. With this information, the traffic impacts of proposed land use changes due to zoning conversions from the 1972 to the 1993 Loudoun County Zoning Ordinances will aid the Board of Supervisors in their decision making process.

The road link traffic volumes are based on the latest available (2006) VDOT traffic count data. The levels of service information was obtained from the latest available traffic studies completed for proposed developments in the vicinity.

Based on the report information, several conclusions are in order:

The segments of Route 28 south of Route 625, Route 625 west of Route 28, Route 7 in the vicinity of Potomac View Road and Potomac View Road (2 lanes) between Route 7 and Route 637 (Cascades Parkway) are carrying large traffic volumes in the study area. In addition, the existing and projected levels of service at the Route 625/Pacific Boulevard, the Route 625/Loudoun County Parkway and Route 7/Route 637 intersections are shown to fail at LOS F. Therefore, the proposed site traffic which would access these road segments should be understood and reviewed carefully.

The segments of Route 28 between Route 7 and Route 625, Nokes Boulevard between Route 28 and Route 637, Shaw Road between Route 606 and Route 625, and Sterling Boulevard between Route 28 and the W & OD Trail boundary appear to have more capacity.

The trip generation information included in the report will be helpful in understanding the relative traffic impacts of key land uses included in the 1972 and 1993 Loudoun County Zoning Ordinance.